

CLAIMS

1. A coating composition for substantially preventing moisture loss from a cured composite coated with the composition, the coating composition prepared by a process comprising:  
heating and blending a mixture comprising waxes and paraffins and dispersing a powdered metal, metal oxide, or metal carbide throughout the mixture; and cooling the mixture to form a waxy solid with powdered metal, metal oxide or carbide dispersed therein;  
wherein the waxy solid is substantially free of entrained gasses, wherein heating is not needed to render homogeneous a coating of the composition as applied to a composite, wherein the coating reduces moisture loss from the composite coated therewith, and wherein the composite comprises residual moisture produced by a cure reaction.
2. The coating composition of Claim 1, wherein the mixture comprises a mixture of beeswax and paraffins.
3. The coating composition of Claim 2, wherein the paraffins comprise primarily aliphatic hydrocarbons having chain lengths in the range from about 18 to about 36 carbon atoms.
4. The coating composition of Claim 1, wherein the metal comprises aluminum.
5. The coating composition of Claim 1, wherein the metal oxide comprises titanium oxide or aluminum oxide.
6. The coating composition of Claim 2, wherein the metal comprises aluminum.
7. The coating composition of Claim 2, wherein the metal oxide comprises titanium oxide or aluminum oxide.

8. The coating composition of Claim 1, wherein the mixture, before addition of powdered metal or metal oxide, has a melting point in the range of about 120° to 250°F.
9. The coating composition of Claim 1, wherein, the composition cools to ambient temperature substantially free of occlusion of gas bubbles.
10. The coating composition of Claim 1, wherein the composition is a solid at temperatures in the range below about 120°F, and liquefies upon heating to a temperature in the range from about 140° to about 180°F.
11. The coating composition of Claim 1, wherein the powdered metal or metal oxide or metal carbide comprises a sufficient amount to permit uniform heating of a mass of the composition, and to provide such internal compression of a mass of the composition upon cooling as to substantially exclude occluded gasses from a cooled mass.
12. The coating composition of Claim 1, wherein the amount of powdered metal or metal oxide or metal carbide comprises from about 5 to about 15 wt. %, based on the weight of the mixture of paraffin and beeswax.
13. The coating composition of Claim 1, wherein when coated onto a composite material subject to residual moisture loss, the composition reduces moisture loss by from about 60 to about 100% as compared to an uncoated composite.
14. A coating composition for substantially preventing development of cracks in a cured composite, the composite otherwise prone to moisture loss under environmental conditions to which it is exposed, the composition comprising:
  - c) a mixture of esters of fatty acids and aliphatic hydrocarbons having a softening point in the range from about 120° to about 180° F; and

d) a powdered additive in sufficient amount to permit uniform heating of a mass of the composition and to provide compression of a mass of the composition upon cooling sufficient to substantially exclude occluded gasses from a cooled mass; wherein the composition comprises a waxy solid at room temperature and wherein the composite to be coated comprises residual moisture resulting from cure of a polymer of the composite.

15. The coating composition of Claim 14, wherein the mixture comprises paraffins and waxes, the paraffins primarily having a chain length of from about 18 to about 36 carbon atoms.
16. The coating composition of Claim 14, wherein the powdered additive is selected from the group consisting of powdered metals, metal carbides and metal oxides.
17. The coating composition of Claim 15, wherein the powdered additive comprises powdered aluminum comprising particulates in the range from about 25 to about 60 microns.
18. The coating composition of Claim 16, wherein the powdered additive is selected from aluminum and titanium oxide.
19. The coating composition of Claim 14, the composition comprising a solid at ambient temperatures in the range below about 120°F.
20. The coating composition of Claim 14, wherein when coated onto a composite material subject to moisture absorption under ambient conditions of temperature and humidity, the composition reduces moisture absorption by from about 60 to about 100%.